



USER MANUAL

ALTO

User Manual

History of modification of this document

Revision	Date	Product version	Modified sections	Comments
A	29/07/05	Preliminary	-	Creation
B	17/08/05	1.00	all	-

WARNING

***This document contains preliminary information about ALTO
DIGIDIA reserves the right to make changes at any time without prior notice in order
to improve design and supply the best possible product.***

***This document includes some confidential information.
It can not be copied, otherwise reproduced, translated into another language
or transmitted without prior written authorisation from DIGIDIA.***

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1 INTRODUCTION

This document is the user manual for the ALTO product.

It provides general information about the ALTO product, and detailed performance characteristics.

This user manual is divided into 6 sections where the user can find all the necessary information for the installation, the usual operation and the first level maintenance of it.

- | | |
|--|---|
| Section 1 – Introduction | ⇒ This part gives a general presentation of this manual. |
| Section 2 – Product presentation | ⇒ This part describes ALTO and its applications. |
| Section 3 – Features and performances | ⇒ This part provides detailed information about interfaces and operation of the ALTO |
| Section 4 – Getting started | ⇒ This part provides information about installation, configuration and normal operation of the ALTO |
| Section 5 – Maintenance | ⇒ This part explains how to make first level maintenance. |
| Section 6 – Appendix | ⇒ The appendixes give additional detailed information about the ALTO and its operation. |

2 PRODUCT PRESENTATION

ALTO belongs to the DRM product line developed by DIGIDIA.

The Content Server ALTO provided by DIGIDIA is fully compliant to the DRM standard and is specially designed for commercial networks. This device performs the audio encoding process and the multiplexing of a MDI (Multiplex Data Interface) transport stream (IP stream). ALTO content Server is also able to encode in real-time all standardized data applications (Slide Show, WebSite broadcast or IP tunnelling).

All control and monitoring of the ALTO DRM Modulator is done through an Ethernet link and using Internet Explorer running on any kind of computer. Alarms can also be controlled and monitored by any standard SNMP managers (standard MIB).

ALTO includes a PC board packaged in a 2U 19" rack and a DIAPASON GPS in a 1U 19" rack and gives to the user, guarantees of reliability and robustness against severe environment including EMC constraints.

3 FEATURES AND PERFORMANCES

3.1 Generalities

ALTO Content Server depicted in figure 1 provides:

- DRM multiplexing according to MDI/DCP standards (see References);
- all A/B/C/D DRM modulation modes supported;
- All 4.5/5/9/10/18 and 20kHz bandwidths supported;
- External GPS receiver;
- One audio input;
- Multiple configuration management for operations;
- SNMP alarms reporting and control for operations;
- Text message insertion;
- User-friendly HTTP interface for configuration management and network supervision;
- Unlimited data application management as an option (Slide Show, Broadcast of Websites, IP tunneling);
- User-friendly data application edition and API for automated data insertion;
- Up to 4 audio inputs as an option;

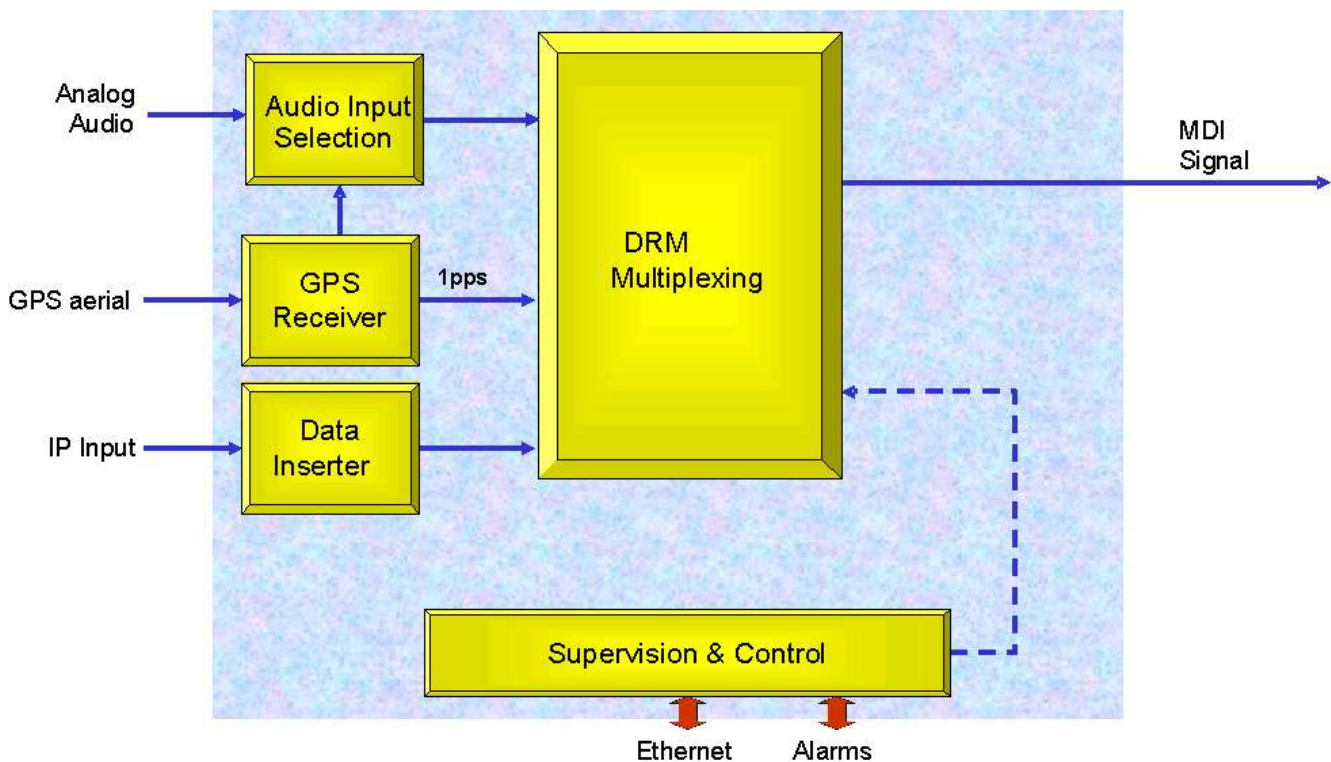


Figure 2: ALTO functional diagram.

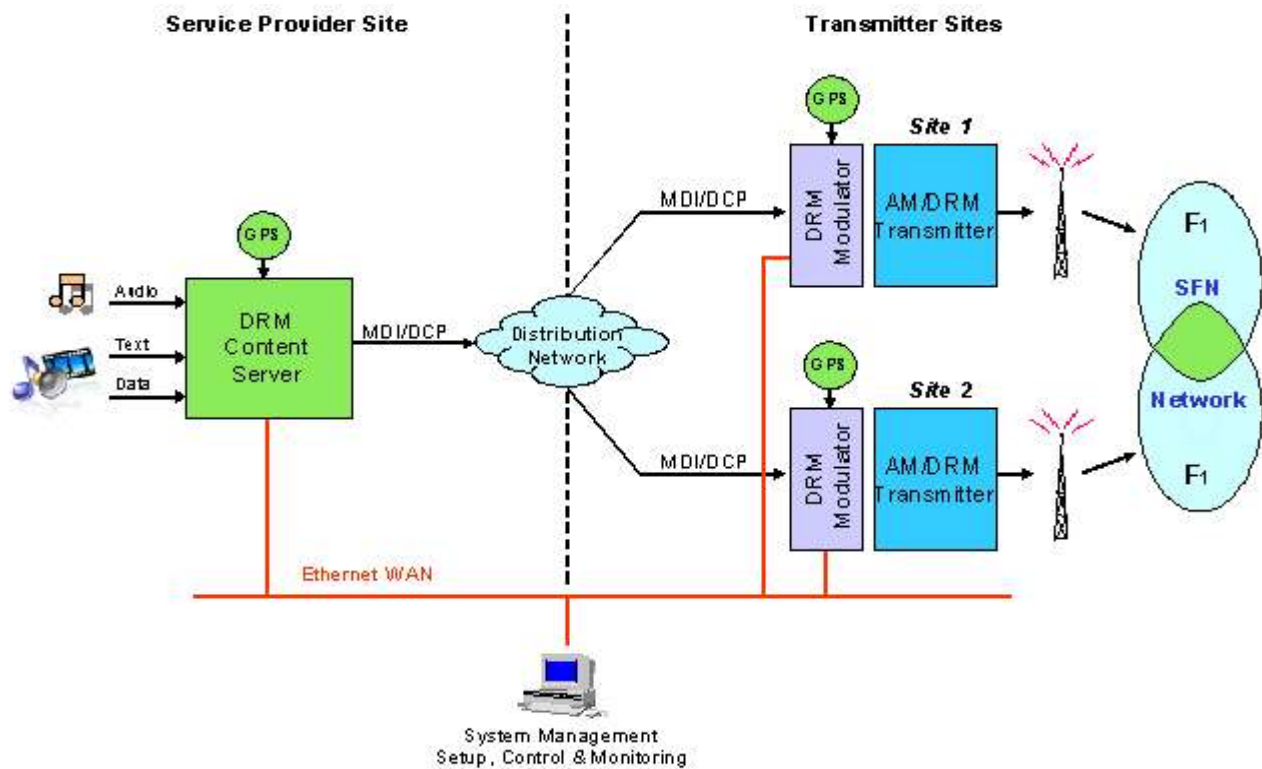


Figure 3: typical system implementation.

Typical DRM network setup is depicted in figure 3. ALTO DRM Content Server is providing DRM encoding of audio, text and data for an SFN network based on multiple SOPRANO DRM modulator.

3.2 Input interfaces

A three-digit label [xxx] enables to locate each connector (see Appendix)

3.2.1 Audio inputs

- AES AUDIO IN [301]:
 - XLR Female (analog Left/Right inputs)

3.2.2 Audio Synchronisation input

- WORD CLOCK IN [401]:
 - BNC Female

3.2.3 Ethernet output

- Ethernet [102]:
 - RJ45 (10/100baseT)
 - MDI protocol,

3.3 Control/Monitoring ways

3.3.1 Ethernet

- Ethernet [102]:
 - RJ45 (10/100baseT)
 - SNMP (V1 et V2c) and HTTP protocols

3.4 Power requirements

3.4.1 Main voltage specifications

The DIGIDIA equipment can be operated within the following ranges:

Input voltage	Frequency
85 to 264 volts	47 to 63 Hz

The DIGIDIA equipment is delivered with a redundant power supply. Assure that both power supplies are connected. In case of unplugged power supply, the equipment power led on front panel is lightening red and the power supply supervisor rings.

WARNING

Equipment must be switch off and main line supply disconnected to network before all open operation or only by qualified staff.

3.5 Safety requirements

Equipment connected to the mains by plug on TN or TT power systems, socket-outlet shall be installed near the equipment and shall be easily accessible.

Class I equipment (only connected to a socket-outlet with a protective earth connection).

Installation category II.

Pollution degree 2.

The ALTO equipment must be connected to earth \perp in accordance to CEI364 (NFC15-100).

3.6 EMC compliance

The ALTO equipment complies with the European Directives for Electromagnetic Compatibility (EMC 89/336/EEC).

The equipment complies with the EN55022-B class and the EN50082-1 standards.

EMC characteristics can be guaranteed only if input / output cables with appropriate shielding are used.

It is necessary to establish a direct short connection between the earth connection point of the rack and any grounding point available on the bay or chassis in which the system is installed in order to meet EMC constraints.

3.7 Transport requirements

Use only the original packing for the transport of any equipment.

WARNING

The ALTO remains under guarantee only if this condition is met.

3.8 Storage requirements

Recommended storage temperature	-20° C and +70° C.
Recommended relative humidity	10 to 80 % at 50°C

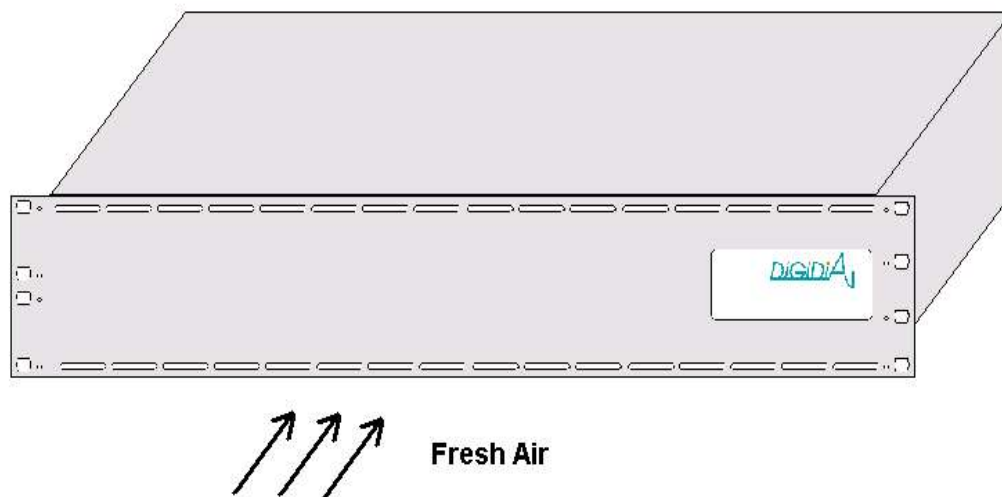
3.9 Environmental requirements

3.9.1 Temperature

Correct operation of the ALTO equipment is insured in an ambient temperature between the following limits: + 0°C and + 50°C.

Power dissipation of the product with all options installed does not exceed 20 W.

3.9.2 Cooling



Multiple internal fans cool ALTO. The airflow is entering the unit through the front panel and ejected through the rear panel.

3.9.3 Altitude

The ALTO equipment can be used from sea level up to 4000 m over sea level.

3.10 Mechanical Characteristics

3.10.1 Weight and dimensions (ALTO only).

- Weight: 15 kg
- Dimensions (W x D x H): 0.483 m (19") x 0.640 m x 0.044 m (1 U)

3.10.2 Weight and dimensions (ALTO in its original packing, ready for shipment).

- Weight: 20 kg
- Dimensions (WxDxH): 0.800 m * 0.900 m * 0.400 m

4 GETTING STARTED

4.1 Unpacking the ALTO rack

Check the packing against transport damage. If it is the case, please contact the carrier immediately. Be careful while unpacking, the equipment may be heavy and must be handled with care.

Keep the original packing for further transport.

Check the equipment against transport damage.

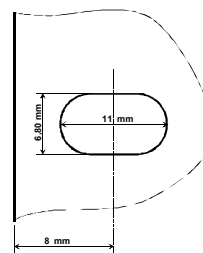
Check if the expected electric cable and the user manual are provided.

4.2 First start up

The equipment must be installed in a 19 inch bay.

Several holes are available on the front panel to tighten the rack inside the cabinet, as presented in the following diagram.

DRAWINGS



WARNING:

Service work described in this paragraph must be carried out by trained staff.

Because of the weight of the rack, mounting it into a cabinet requires the rack to be supported by rails and not by the front panel only.

1. Install all necessary cables.
2. Make sure the equipment is correctly grounded.
3. Make sure the air flow around the equipment permits an optimal cooling. (Do not obstruct the blower output). No other equipment should be installed directly under and above the ALTO equipment.
4. Connect the power supply

WARNING:

To prevent damage to the equipment, check the main voltage, current and frequency available which must be in the range of DIGIDIA specifications.

1. Switch on your device

WARNING:

ALTO can be controlled using a web browser installed on a computer. See Appendix for the configuration of the computer. On line help is available for every menu.

The **default settings** are the next :

- IP address: **10.64.1.1**
- Subnet Mask: **255.240.0.0**
- Gateway : **10.64.2.1**
- Equipment name : **ALTO**
- Equipment comment : **NO COMMENT**
- User/Password : **public/public** (level 1); the level 1 is the less restricted access level.
- LogFile : no event

5 MAINTENANCE

5.1 Reading the log file

ALTO includes a log file in which the 256 last events are stored. Use the web browser to read it.

5.2 First level maintenance

Because of the digital technology used in the DIGIDIA equipment, the first level maintenance is restricted to an exchange of the whole equipment.

WARNING:

Make sure the operator has an easy and safe access to the equipment.

5.2.1 Rack replacement

See the following « Uninstalling the equipment » section.

5.2.2 Uninstalling the equipment

WARNING:

Make sure the operator has an easy and safe access to the equipment.

Switch the equipment off, and remove its corresponding main cable.

Remove all other cables.

Remove all necessary screws, including its back plane screw.

Extract the unit from its housing by pulling out the unit by its front panel handles.

In case the equipment is replaced by a spare one, see « First start-up » section.

Check that the place is still safe for the operation of the rest of the equipment in the bay.

6 APPENDIX

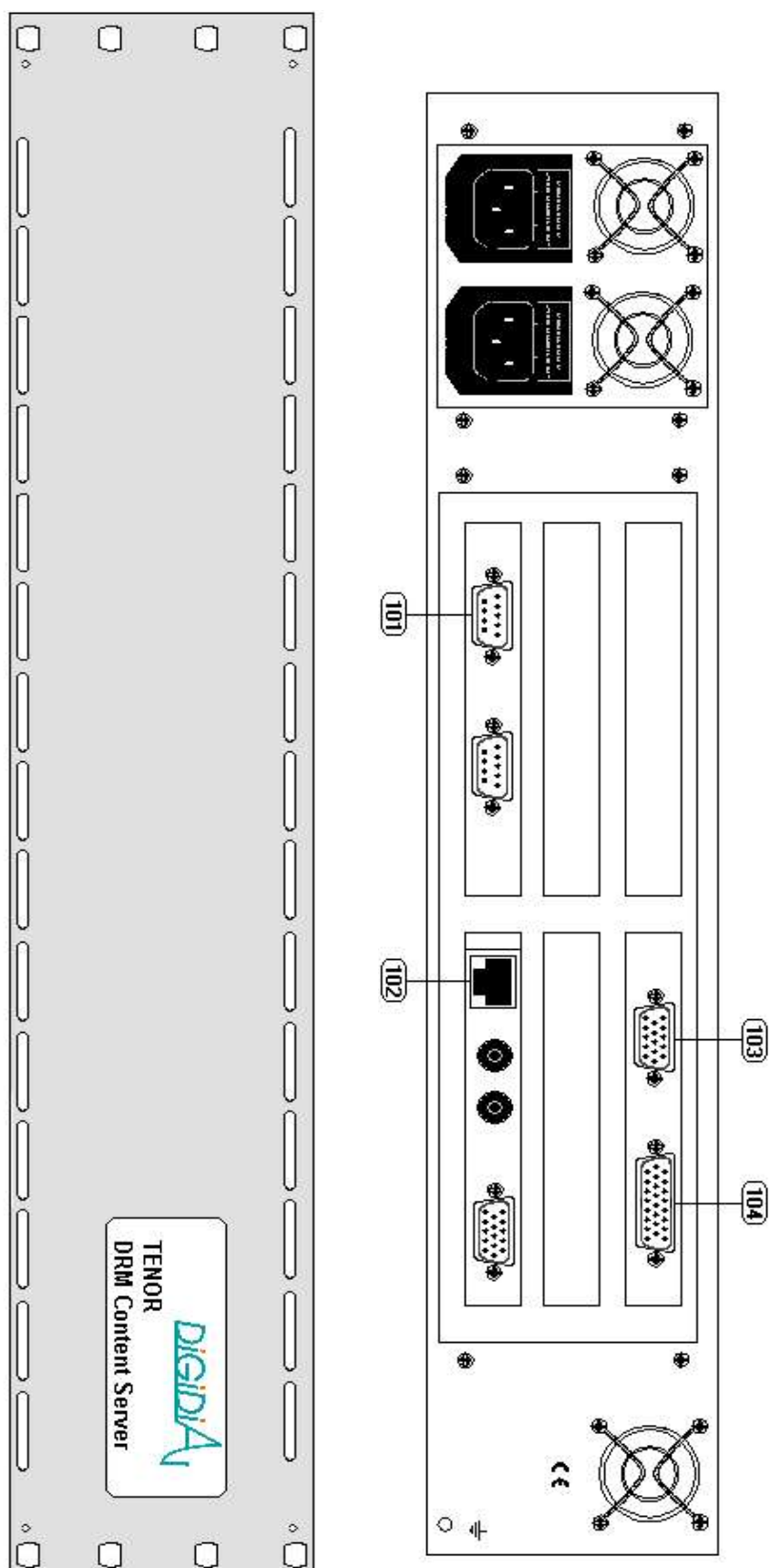
6.1 Glossary

GPS	: Global Positioning System
http	: Hyper Text Transfer Protocol
SFN	: Single Frequency Network
SNMP	: Simple Network Management Protocol
TCP / IP	: Internet Suite of Protocols

6.2 References

- [1] ETSI ES 201 980: Digital Radio Mondiale (DRM); System Specification.
- [2] ETSI TS 102 820: Digital Radio Mondiale (DRM); Multiplex Distribution Interface (MDI).
- [3] ETSI TS 102 821: Digital Radio Mondiale (DRM); Distribution and Communications Protocol (DCP).
- [4] EN 550022-B: "Limits and methods of measurement of radio interferences characteristics of information technology equipment".
- [5] EN 50082-1: "Generic immunity standard –Part 1: Domestic commercial and light industry".

6.3 Front and rear panels of Content Server



6.4 Audio board Connectors

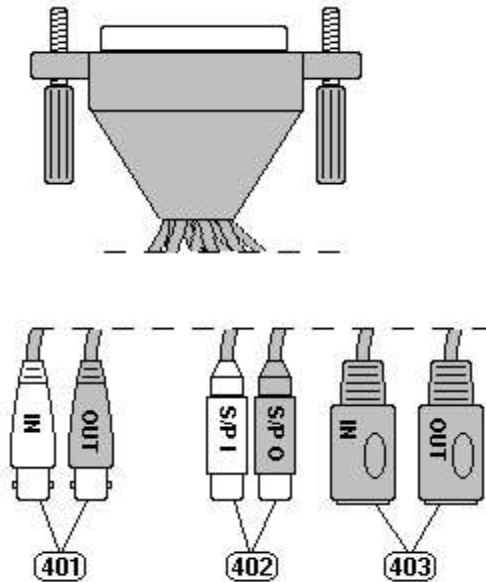


Figure 4: AUDIO SYNCHRO Connector.

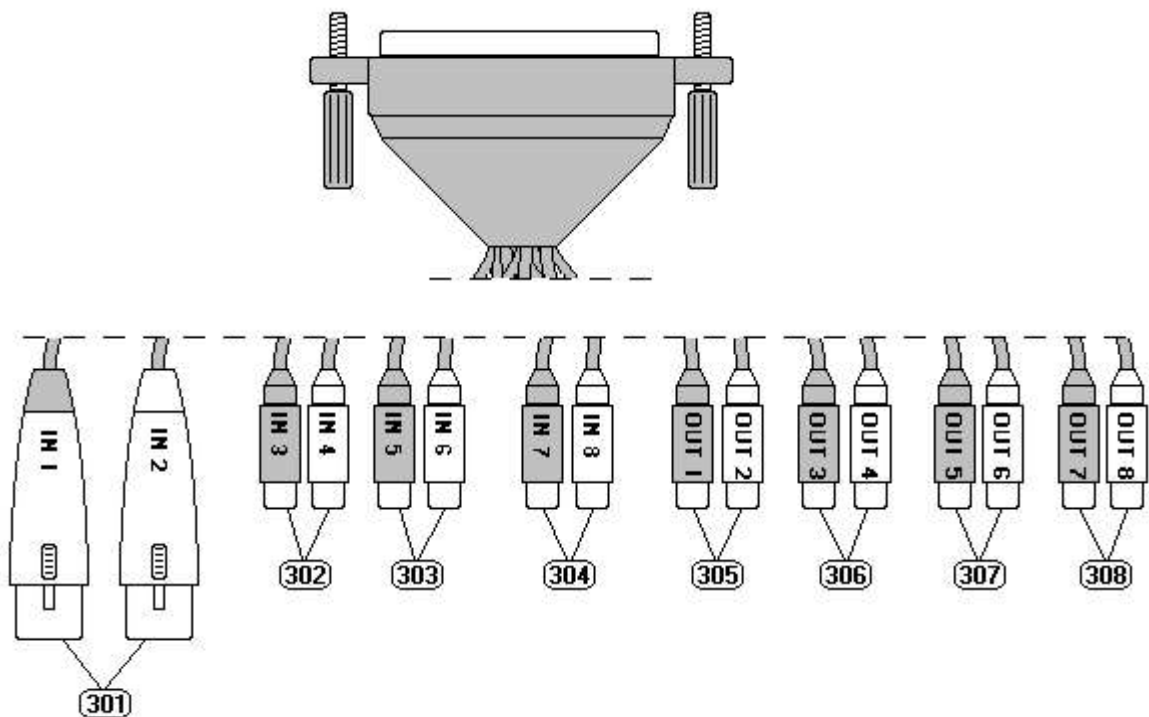
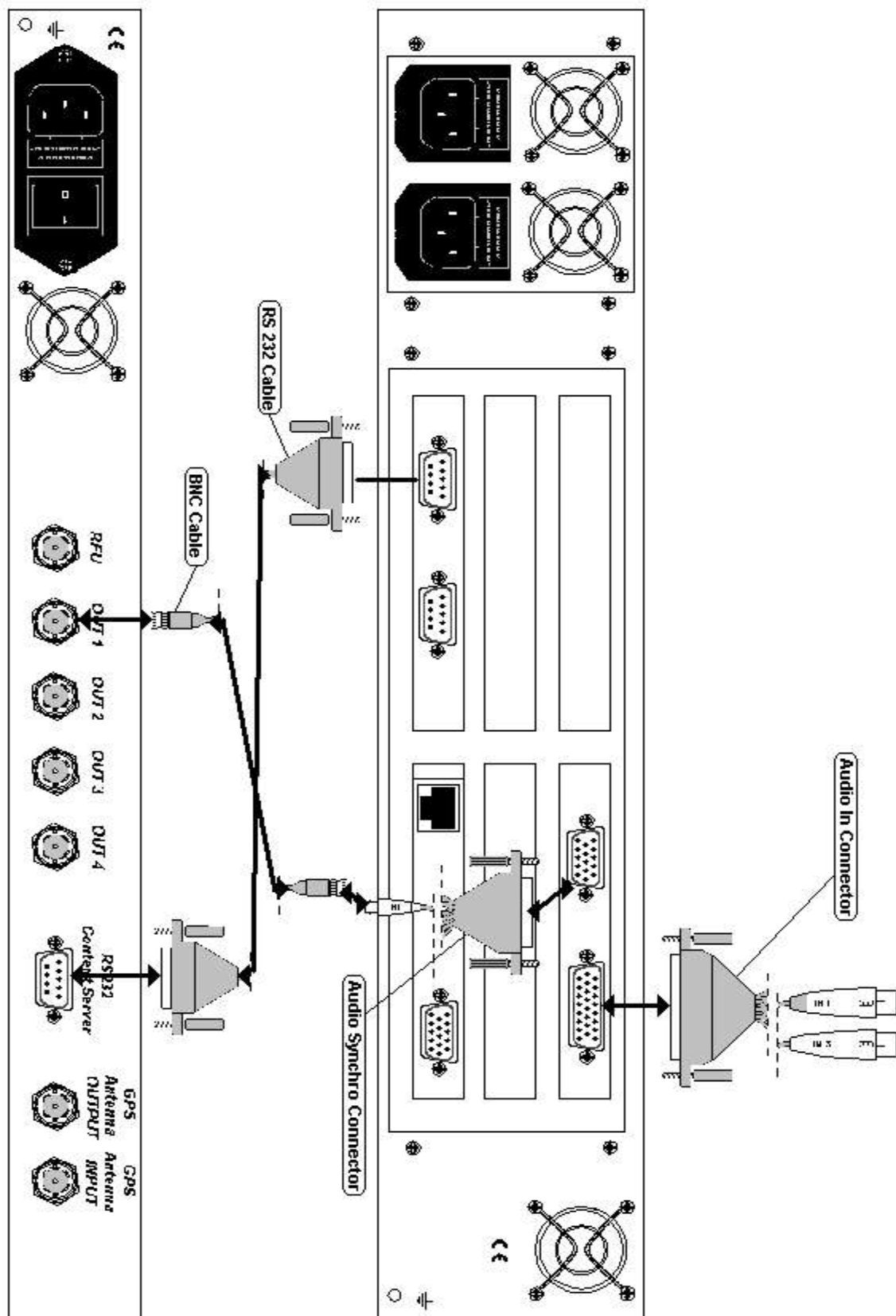


Figure 5: AUDIO IN Connector.

AUDIO SYNCHRO connector has to be plugged on ALTO input [103].

AUDIO IN connector has to be plugged on ALTO input [104].

6.5 Connecting Content Server System



6.6 Control Software

ALTO can be controlled using a web browser installed on a computer.

System required: A computer with Windows (Millenium, NT, 2000 or XP) is required with Internet Explorer 6.0 (or higher) and JavaScript V1.5 installed.

A network board have to be installed on this computer with the following settings :

- **IP address** : 10.64.x.y with x and y different of the ALTO IP address ($x \neq 1$ or $y \neq 1$) in the case of the default IP address of ALTO (10.64.1.1)
- **Subnet Mask** : 255.240.0.0 corresponding to the default subnet mask of ALTO.

The connection between ALTO and the computer can be made directly with a RJ45 crossed cable.

To check to the good network settings, ping the ALTO device in a DOS window (ping 10.64.1.1).

6.6.1 Control the ALTO

To control ALTO :

- Launch Internet Explorer,
- Fill in the address field : <http://10.64.1.1> (10.64.1.1 corresponds to the default IP address of ALTO), Automatically, the welcome page appears.
- fill in User/Password fields with **public/public** (level 1 is the less restricted access level).

For more information about the control software, read the on-line help.

6.7 Warranty terms

6.7.1 Standard product warranty

This DIGIDIA product is warranted against defects in material and workmanship for a period of one year from date of shipment. During the warranty period, DIGIDIA will, at its option, either repair or replace products which prove to be defective, free-of charge.

For warranty service or repair, this product must be returned to DIGIDIA France. Buyer shall prepay shipping charges to DIGIDIA and DIGIDIA shall pay shipping charges to return the product to buyer.

Products returned for repair outside of the warranty period will be charged on a per unit basis. Per unit charges are established for each product repair as they arise.

On request, a customer / supplier contract may be established for extending these warranty terms on a yearly basis.

6.7.2 Limitation of warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by Buyer, Buyer-supplied software or interfacing, unauthorized modification or misuse, operation outside of the environmental specifications for the product, or improper site preparation or maintenance.

6.8 Instructions in case of return to factory

In case you need to return your equipment to DIGIDIA for updating or maintenance, please use the following procedure:

- Call the hot line at DIGIDIA before shipping your equipment, in order to check whether it is really necessary to return it.

- The shipment back to DIGIDIA is organised by the customer and at his expense and DIGIDIA will organise and pay the return after repair to the customer's company. If you are part of an EEC country, the shipment is at your expense until DIGIDIA's premises. If you are outside EEC, the shipment is at your expense until RENNES SAINT-JACQUES airport (France).
- During the guarantee period, the repair is free of charge. If your equipment is out of guarantee and if you have no maintenance contract (*), DIGIDIA will send you by fax a quotation for this repair that you have to acknowledge by sending the form back.
- Always use the original packing in which the equipment had been delivered to you.
- Do not return any documentation or cables (power cord or other).
- Use the attached form to explain the reason of the return and, when necessary, the problems encountered.
- Send the equipment to:

DIGIDIA
Support Department
Immeuble Orchis
Les landes d'Apigné
35650 LE RHEU - France
Tel: +33 (0)2 99 14 63 32
Fax: +33 (0)2 99 14 58 83
Email: support@digidia.fr

(*) If you want to set up a maintenance contract, please contact our sales department.



Model of report for return to factory

From:

Telephone:

Company:

Telefax:

☐ Under guarantee

☐ Other (quotation will be submitted)

☐ Under a maintenance contract

Type of system:

☐ SOPRANO

☐ ALTO

☐ DIAPASON

Reason of return:

☐ Update

☐ Upgrade

☐ Maintenance

Type of problem:

☐ Hardware

☐ Software

☐ Undefined

EQUIPMENT SERIAL NUMBER	FIRMWARE VERSION	PC SOFTWARE NAME/VERSION

EQUIPMENT SPECIFICITY (option, embedded boards, modem, etc.)

PROBLEM SPECIFICATION (Front Panel state, Software menu, Error messages, etc.)



ELECTROMAGNETIC COMPLIANCE

STATEMENT

(EEC directive 89/336 article 10)

Manufacturer name: **DIGIDIA**

Address: **Immeuble Orchis
Les landes d'apigné
35650 LE RHEU - FRANCE**

Equipment designation: **XXXXXXX** ALTO

M. OLIVIER Pascal, Manager

Declare having the strong presumption that the above designated equipment complies with the essential EEC89/336 directive requirements, by application of the standards listed below:

NF EN 55022-B class

NF EN 50082-1

Le Rheu, August 2005



SAFETY COMPLIANCE

STATEMENT

(EEC directive 73/23)

Manufacturer name: **DIGIDIA**

Address: **Immeuble Orchis
Les landes d'apigné
35650 LE RHEU - FRANCE**

Equipment designation: **XXXXXXX** ALTO

M. OLIVIER Pascal, Manager

Declare having the strong presumption that the above designated equipment complies with the essential EEC73/23 directive requirements, by application of the standards listed below:

NF EN 60950

Le Rheu, August 2005